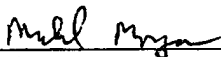


REMARKS

Upon entry of the present amendment claims 1-13 and 17-32 are pending in the application. Claims 1-13 and 17-18 have been amended in accordance with the requirements of U.S. patent practice. New claims 19-32 add no new matter, as these claims contain subject matter deleted from the amended claims. There is 1 independent claim and a total of 29 claims pending in the application. Applicants respectfully request entry of the preliminary amendment.

Respectfully Submitted,


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Version with Markings to Show Changes Made

As is permitted by 37 C.F.R. §1.121(c)(1)(ii), amendments to the claims are shown by an equivalent marking system. Insertions are still shown by underline, and deletions are shown by strikethrough.

1. (Amended) A sol-gel coating material comprising
- (A) an acrylate copolymer solution comprising ~~at least one acrylate copolymer~~ (A1) preparable by copolymerizing at least the following monomers a reaction product of:
- a1) at least one (meth)acrylic ester ~~which~~that is substantially free of acid groups,
- a2) at least one ethylenically unsaturated monomer ~~which~~that ~~bears~~carries at least one hydroxyl group per molecule and is substantially free of acid groups, and
- a3) at least one ethylenically unsaturated monomer ~~which bears~~that carries per molecule at least one acid group ~~which is convertible~~that can be converted into the a corresponding acid anion group;
- (B) a stock coating material ~~preparable by hydrolyzing and condensing~~comprising a hydrolysis and condensation product of at least one hydrolyzable silane ~~(B1)~~ of the general formula I



~~wherein the variable R has the following meaning:~~

R = hydrolyzable groups, hydroxyl groups, and nonhydrolyzable groups with the proviso that there is at least one ~~and there are preferably at least two hydrolyzable group(s)~~ present; and

- (C) a sol ~~preparable by hydrolyzing, condensing and complexing~~comprising a hydrolysis, condensation, and complexing product of the at least one hydrolyzable silane ~~(B1)~~ of the general formula I and at least one hydrolyzable metal compound ~~(C1)~~ of the general formula II



~~where the variables and the index have the following meaning~~wherein:

M = aluminum, titanium, or zirconium,

R = hydrolyzable groups, hydroxyl groups, and nonhydrolyzable groups with the proviso that there is at least one and there are preferably at least two hydrolyzable group(s) present, and

n = 3 or 4.

2. (Amended) The sol-gel coating material of claim 1 ~~characterized in that it~~ wherein the sol-gel coating material is aromatics free.
3. (Amended) The sol-gel coating material of claim 1 ~~or 2, characterized in that it~~ wherein the sol-gel coating material comprises, in each case based on its total amount, 5 to 40, preferably 10 to 35 and especially 15 to 30 weight % of the acrylate copolymer solution (A), 5 to 40, preferably 10 to 35 and especially 15 to 30 weight % of the stock coating material (B) and also 1 to 15, preferably 2 to 10 and especially 3 to 8 weight % of the sol (C).
4. (Amended) The sol-gel coating material of any of claims 1 to 3, characterized in ~~that wherein the sol-gel coating material has a~~ solids contents of the constituents acrylate copolymer solution (A), the stock coating material (B), and the sol (C) are in a weight ratio of (A):(B):(C) of
——(0.5 to 5):(1 to 10):(1),
preferably 1 to 4:2 to 8:1 and
especially 1.5 to 3:3 to 6:1.
5. (Amended) The sol-gel coating material of any of claims 1 to 4, characterized in that wherein:
——the nonhydrolyzable groups R are at least one of an alkyl groups, especially of 1 to 4 carbon atoms; an alkenyl groups, especially of 2 to 4 carbon atoms; alkynyl groups, especially of 2 to 4 carbon atoms; and/or an aryl groups, especially of 6 to 10 carbon atoms; and
——the hydrolyzable groups R are at least one of a hydrogen atoms; an alkoxy groups, especially of 1 to 20 carbon atoms; an alkoxy-substituted alkoxy groups of with 3 to 20 carbon atoms; an acyloxy groups, especially of 1 to 4 carbon atoms; and an alkylcarbonyl groups, especially of 2 to 6 carbon atoms.

6. (Amended) The sol-gel coating material of claim 5, ~~characterized in that~~wherein ~~the hydrolyzable groups R are at least one of a methoxy group, an ethoxy group, a n-propoxy group, an i-propoxy group, a n-butoxy group, a sec-butoxy group, a beta-methoxyethoxy group, an acetoxy group, a propionyloxy group, and/or an acetyl groups; and~~
the ~~nonhydrolyzable groups R are at least one of a methyl group, an ethyl group, a propyl group, a butyl group, a vinyl group, a 1-propenyl group, a 2-propenyl group, a butenyl group, an acetylenyl group, a propargyl group, phenyl, and/or naphthyl groups.~~
7. (Amended) The sol-gel coating material of ~~any of claims 1 to 6, characterized in that~~wherein the nonhydrolyzable groups R contains at least one functional group, ~~especially at least one epoxide group, amino group, olefinically unsaturated group, mercapto group and/or isocyanate group and/or their reaction products with further reactive compounds.~~
8. (Amended) The sol-gel coating material of ~~any of claims 1 to 7, characterized in that~~wherein the sol is ~~complexed by~~complexing is effected using organic compounds ~~which~~that form chelate ligands.
9. (Amended) The sol-gel coating material of ~~any of claims 1 to 8, characterized in that~~wherein ~~it~~the sol-gel coating material is a sol-gel clearcoat material.
10. (Amended) ~~The use of~~A method comprising applying the sol-gel coating material of ~~any of claims 1 to 9 to a substrate to produce a for producing mar-resistant sol-gel coatings, especially for single coat or multicoat paint systems.~~
11. (Amended) ~~The use of the sol-gel coating material~~method of claim 10, ~~characterized in that~~wherein the mar-resistant sol-gel coating is a cured single coat or multicoat at least one coat paint systems are concerned.
12. (Amended) ~~The use of the sol-gel coating material~~method of claim 10 ~~or 11, characterized in that the paint systems are~~wherein the mar-resistant sol-gel coating is

one of vehicle original equipment manufacturing coatings, vehicle repair coatings, an automotive OEM coating, an automotive refinish coating, an industrial coatings, including container coatings, a plastics coatings, and a furniture coatings.

13. (Amended) ~~A process for producing mar-resistant sol-gel coatings on single-coat or multicoat paint systems by comprising~~
- (i) ~~applying a single-coat or multicoat at least one coat of a~~ paint system to a primed or unprimed substrate,
 - (ii) ~~applying a the sol-gel coating material of claim 1 atop the single-coat or multicoat paint system, and~~
 - (iii) curing the sol-gel coating material;
- ~~characterized in that a sol-gel coating material as claimed in any of claims 1 to 9 is used.~~
17. (Amended) ~~A Sol-gel coatings preparable from a sol-gel coating material as claimed in any comprising the sol-gel coating material of claims 1 to 9 and/or by the process of any of claims 13 to 16.~~
18. (Amended) ~~A Substrates comprising at least one sol-gel coating as claimed in of claim 1817.~~